

Translation

PATENT COOPERATION TREATY

PCT/FR2003/002774



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference R8039WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/002774	International filing date (day/month/year) 19 septembre 2003 (19.09.2003)	Priority date (day/month/year) 20 septembre 2002 (20.09.2002)
International Patent Classification (IPC) or national classification and IPC H01Q 11/08, 1/36, 1/38		
Applicant UNIVERSITE DE RENNES 1		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>1</u> sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 16 avril 2004 (16.04.2004)	Date of completion of this report 05 November 2004 (05.11.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

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International application No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 pages 1-18, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages 1-19, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the drawings:
 pages 1/8-8/8, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5, 6, 13, 18	YES
	Claims	1-4, 7-12, 14-17, 19	NO
Inventive step (IS)	Claims		YES
	Claims	1-19	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

D1: US 6 278 414;

D2: XP 6 016 948 "Broadband tapered printed quadrifilar helical antenna", Louvigné.

2. Claims 10 and 11 are not clear (PCT Article 6).

According to said claims "one of the ends of each of said radiating wires is connected ... to one of the ends of said radiating wire with which said parasitic wire is associated".

For the purpose of the examination report, it has been assumed that the proper wording is as follows:

"one end of each of said parasitic wires is connected ... to one of the ends of said radiating wire with which said parasitic wire is associated".

3. The subject matter of claims 1-4, 7-12, 14-17 and 19 does not comply with the requirement of novelty (PCT Article 33(2)).

3.1 D1 discloses all of the features in claim 1:

a helical antenna including at least one helix (D1: column 1, line 15) consisting of at least two radiating wires (D1: figures 7-11), wherein at least one of said radiating wires is associated with a parasitic wire (D1: figure 11a; column 9, lines 6-18) of which the width is smaller than or equal to that of said radiating wire(s) (D1: figure 11a) in such a way as to broaden the band width of said antenna (D1: column 9, lines 27-29).

3.2 D1 further discloses the features in dependent claims 2-4, 7-17 and 19:

- claims 2, 4 and 8: see figures 7b, 11a and 11b;
- claim 3: see column 4, lines 54-63;
column 9, lines 22-23;
- claim 7: this claim, in its current form, does not contain any additional limitations. Indeed, all that has to be done in figure 11a is "associate" the radiating and parasitic wires as indicated in the annex;
- claim 9: see figures 7b and 8b;
- claim 10: see figure 8; column 8, lines 55-58;
- claim 11: see figure 11 (capacitive coupling); figure 8 (resistive coupling);
- claim 12: see column 8, lines 43-52;
column 9, lines 19-24;

- claim 14: see figures 9b and 11;
- claim 15: see column 6, lines 60-67;
- claim 16: see figure 8b;
- claim 17: see column 6, lines 36-43;
- claim 19 see column 6, lines 1-6.

4. The additional features in **claims 5, 6, 13 and 18** do not involve an inventive step (PCT Article 33(3)) because they are either routine technical practice or are known from D2:

(a) claim 5: in figure 11a, D1 discloses (cf. also column 9, lines 23-29) that the width of the parasitic wire is smaller than that of the radiating wire in order to broaden the band width of the antenna. Further reducing this ratio is considered to be a routine technical step;

(b) claim 6: the coupling is always optimised;

(c) claim 13: the selection of a capacitive coupling for the coupling between the radiating wire and the parasitic wire does not involve an inventive step;

(d) claim 18: the use of wires of variable width to broaden the band width is known from document D2 (cf. figure 1).

5. It should be noted that document D1, which is particularly relevant, has not been cited in the

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description in order to indicate the prior art (PCT
Rule 5.1(b)).